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AMSAT NEWS SERVICE
ANS-159

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see:
http://www.amsat.org/mailman/listinfo/ans

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ANS-159 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 159.01
From AMSAT HQ KENSINGTON, MD.
DATE June 7, 2020
To All RADIO AMATEURS
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The 2020 edition of AMSAT's "Getting Started with Amateur Satellites" is now available on the AMSAT store. A perennial favorite, Getting Started is updated every year with the latest amateur satellite information, and is the premier primer of satellite operation. This definitive reference is written for the new satellite operator, but includes discussions for the experienced operator who wishes to review the features of amateur satellite communications. The new operator will be introduced to the basic concepts and terminology unique to this mode. Additionally, there are many practical tips and tricks to ensure making contacts, and to sound like an experienced satellite operator in the process. The book is presented in DRM-free PDF format, in full color, and covers all aspects of making your first contacts on a ham radio satellite.

Joining the cover art for the first time this year is a depiction of the next generation of AMSAT satellites - AMSAT's GOLF series of 3U CubeSats.

The digital download is available for $15 at https://tinyurl.com/2020GettingStarted

[ANS thanks the AMSAT Office for the above information]

Amateur Radio on the International Space Station (ARISS) Team in the United States Creates a New Organization: ARISS-USA

In late May, the USA team of the ARISS International working group became an incorporated non-profit entity in the state of Maryland, officially becoming ARISS-USA. This move allows ARISS-USA to work as an independent organization, soliciting grants and donations. They will continue promoting amateur radio and STEAM—science, technology, engineering, arts, and math within educational organizations and inspire, engage and educate our next generation of space enthusiasts.

ARISS-USA will maintain its collaborative work with ARISS International as well as with US sponsors, partners, and interest groups. The main goal of ARISS-USA remains as connecting educational groups with opportunities to interact with astronauts aboard the International Space Station (ISS). ARISS-USA will expand its human spaceflight opportunities with the space agencies, beyond low Earth orbit, starting with lunar opportunities including the Lunar Gateway. ARISS-USA will continue to review and accept proposals for ISS contacts and expand its other educational opportunities to increase interest in space sciences and radio communications.

Becoming an independent organization has been discussed for quite some time. ARISS-USA lead Frank Bauer, KA3HDO said “The scope and reach of what ARISS accomplishes each year has grown significantly since its humble beginnings in 1996. Our working group status made it cumbersome to establish partnerships, sign agreements and solicit grants. These can only be done as an established organization.” Bauer further elaborated, “The ARISS-USA team remains deeply indebted to our working group partners—ARRL and AMSAT, who enabled the birth of ARISS—and our steadfast sponsors, NASA Space Communication and Navigation (SCaN) and the ISS National Lab (INL).” ARISS-USA aims to keep earning high regards from all these partners and sponsors.

While ARISS-USA is now an incorporated non-profit entity, we are in the process of applying for tax exemption as a Section 501(c)(3) charitable, scientific or educational organization. Until that status is approved by the USA Internal Revenue Service, donations made directly to ARISS-USA will not be tax deductible for taxpayers in the

USA. Those wanting to make a tax deductible donation for the benefit of ARISS-USA can, in the meantime, continue to make donations to ARISS sponsor AMSAT-NA through the ARISS website at: www.ariss.org.

As ARISS-USA begins a new era as a human spaceflight amateur radio organization, it acknowledges those who were so instrumental in the formation of human spaceflight amateur radio. These include Vic Clark, W4KFC and Dave Sumner, K1ZZ from the ARRL; Bill Tynan, W3XO and Tom Clark, W3IO from AMSAT; Roy Neal, K6DUE a major guide for SAREX and ARISS; and NASA astronaut Owen Garriott, W5LFL. Also remembered is Pam Mountjoy, NASA education, who had the vision to develop the ARISS working group as a single amateur radio focus into the space agencies. All of these giants' shoulders are what ARISS-USA rests upon.

[ANS thanks ARISS for the above information]

AMSAT President's Statement on Creation of ARISS-USA

Announced June 5, 2020, ARISS-USA has been formed as a non-profit corporation to operate independently of The Radio Amateur Satellite Corporation (AMSAT). Since the formation of Amateur Radio on the International Space Station (ARISS) in the mid-1990s, AMSAT has been a consistent supplier of technical expertise, funding, and operational logistics. AMSAT will work with ARISS-USA to ensure a smooth transition for operations and funding.

Over the years, as the scope and activity of ARISS grew, AMSAT continued its financial backing in times of need, providing hundreds of thousands of dollars to fund projects and operations. Many of AMSAT's members are an integral part of the ARISS team. The human spaceflight element of AMSAT's vision has been realized through these contributions.

I offer my best wishes to ARISS-USA for a successful future.

73,

Clayton
W5PFG
AMSAT President

[ANS thanks Clayton Coleman, W5PFG, AMSAT President, for the above information]

Back Issues of The AMSAT Journal Available to AMSAT Members

All issues of The AMSAT Journal dating back to 2014 are now available to AMSAT members on AMSAT's new membership portal. The 1969-2013 archive will be added at a later date. Stay tuned for additional member benefits coming soon.

If you're a current AMSAT member, get logged on today. If you are not yet a member, consider joining today.

https://launch.amsat.org/

[ANS thanks Paul Stoetzer, N8HM, AMSAT Executive Vice President, and Robert Bankston, KE4AL, AMSAT Vice President - User Services for the above information]

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AMSAT's GOLF Program is about getting back to higher orbits, and it all begins with GOLF-TEE – a technology demonstrator for deployable solar panels, propulsion, and attitude control. Come along for the ride. The journey will be worth it!

https://tinyurl.com/ANS-GOLF

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AO-73 Now in Full-Time Transponder Mode

After some eight months in continuous sunlight, AO-73 (FUNcube-1) has now started to see some eclipses during each orbit.

The telemetry received has shown that the spacecraft continued to function perfectly during this period and the on board temperatures did not reach excessively high levels.

After this became clear, our next concern was the battery. Having been kept fully charged for this period, would it actually hold a charge and do its job when in eclipse?

After three weeks of increasing eclipse periods we can now see that indeed the Li battery appears to be ok and the bus voltage has not yet dropped below 8.1 volts.

So today we have changed the operating mode from high power telemetry educational mode to continuous amateur mode with the transponder ON. The telemetry continues to be available, albeit at low power.

We will, of course, continue to carefully monitor the data but are planning to leave the spacecraft in this mode for at least the next week. Please enjoy using it!

[ANS thanks Graham Shirville, G3VZV, of the FUNcube Team, and AMSAT-UK for the above information]

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Purchase AMSAT Gear on our Zazzle storefront.
25% of the purchase price of each product goes
towards Keeping Amateur Radio in Space
https://www.zazzle.com/amsat_gear

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VUCC Awards-Endorsements for June 2020

Here are the endorsements and new VUCC Satellite Awards issued by the ARRL for the period May 1, 2020 through June 1, 2020.

Congratulations to all those who made the list this month!

CALL	May	June
W5CBF	564	657
K9UO	565	575
KI7UNJ	New	510
WA9JBQ	250	275
W4DTA	240	261
W4ZXT	202	252
KE0WPA	152	200
W5CBF(EM21)	179	184
DL4ZAB	172	178

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KE4BKL      101    125
N4BAF      100    118
AA0CW    New    105
N5EKO    New    102
W8EH         New    101
W8EH       New    100
KN4GQB New    100
KX9X    New    100
W9TTY    New    100
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If you find errors or omissions. please contact me off-list at <mycall>@<mycall>.com and I'll revise the announcement. This list was developed by comparing the ARRL .pdf listings for the two months. It's a visual comparison so omissions are possible. Apologies if your call was not mentioned. Thanks to all those who are roving to grids that are rarely on the birds. They are doing most of the work!

[ANS thanks Ron Parsons, W5RKN, for the above information]

KG5FYJ Assigned to Upcoming ISS Mission

NASA has assigned astronaut Kate Rubins, KG5FYJ, to a six-month mission to the International Space Station as a flight engineer and member of the Expedition 63/64 crew.

Rubins, along with cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov of the Russian space agency Roscosmos, are scheduled to launch Oct. 14 on the Soyuz MS-17 spacecraft from the Baikonur Cosmodrome in Kazakhstan.

Among some of the hundreds of experiments ongoing during her mission, Rubins will conduct research using the Cold Atom Lab to study the use of laser-cooled atoms for future quantum sensors, and will work on a cardiovascular experiment that builds on an investigation she completed during her previous mission.

NASA selected Rubins as an astronaut in 2009, she was licensed as a Technician class amateur in 2015, and she completed her first spaceflight in 2016 as an Expedition 48/49 crew member. She launched July 6, 2016, and spent 115 days in space, during which she conducted two spacewalks totaling 12 hours and 46 minutes before her return to Earth Oct. 29, 2016. During her stay on the space station, Rubins helped advance i mportant science and research and became the first person to sequence DNA in space.

Born in Farmington, Connecticut, and raised in Napa, California, Rubins received a Bachelor of Science degree in molecular biology from the University of California, San Diego, in 1999 and a doctorate in cancer biology in 2005 from Stanford University School of Medicine’s Department of Biochemistry and Department of Microbiology and Immunology in Palo Alto, California. Before joining NASA, Rubins worked as a fellow/ principal investigator at the Whitehead Institute for Biomedical Research in Cambridge and headed 14 researchers studying viral diseases that primarily affect Central and West Africa.

[ANS thanks NASA for the above information]

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https://amsat.org/product-category/hardware/

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We wish all of you safekeeping and hope to be at a hamfest near you soon.

The following events scheduled to have an AMSAT presence have been CANCELED:

June 12-13, 2020, Ham-Com, Plano, TX

[ANS thanks Robert Bankston, KE4AL, AMSAT Vice President - User Services, for the above information]

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Ron (@AD0DX) and Doug (@N6UA) are making another run at the elusive DL88 in Big Bend National Park, TX. As we know they tried this grid back in March, and due to the mud couldn't get to the grid, so never ones to quit, off they go again. Today the tentative date is Monday, July 6th, 2020. They will be using the K5Z call sign. More information is available at the K5Z QRZ Page.

Please submit any additions or corrections to Ke0pbr (at) gmail.com

[ANS thanks Paul Overn, KE0PBR, for the above information]

Satellite Shorts From All Over

+ FoxTelem / Fox-in-a-Box Tips: 1) Use a short USB extension cord to physically isolate your SDR dongle from the computer/Pi. There will be less mechanical stress, and a better electrical connection, which will give fewer errors. 2) If you use an RTL-SDR dongle (not really supported, but mostly works), don't turn on DUV and High Speed at the same time. You will get an error when the decoder starts. Note especially if you have it set up to start when the satellite comes over the horizon. [ANS thanks Chris Thompson, G0KLA/AC2CZ, AMSAT FoxTelem Developer, and Burns Fisher, WB1FJ, AMSAT Flight Software, for this information]

+ The Harbin Institute of Technology released a short cartoon video entitled "Longjiang-2: Journey to the Moon" about LO-94, the world's smallest spacecraft which entered lunar orbit independently. https://www.youtube.com/watch?v=LGi1aACPA4A&feature=youtu.be [ANS thanks the Harbin Institute of Technology for this information]

+ Kylee Shirbroun, KE0WPA, posted a short portion of the science fair video she made about amateur radio satellites. It can be found at https://twitter.com/kylee_ke0wpa/status/1267867729320534016 [ANS thanks Kylee Shirbroun, KE0WPA, for this information]

+ Mineo Wakita, JE9PEL, maintains a Doppler.sqf file for using active amateur satellites in SatPC32. It can be found at: http://www.ne.jp/asahi/hamradio/je9pel/Doppler.sqf

+ The AMSAT Folding at home team continues to climb the rankings. Now in the top 1,200 of all teams at the time of this writing, the team has grown to 44 members with 77 active CPUs within the past 50 days and includes ten members in the top 100,000 of all users. Alex Free, N7AGF, is our top contributor with over 92,000,000 points credited to AMSAT's team. For more information about the Folding at home project and how you can contribute to scientific research, including the fight against COVID-19, see https://foldingathome.org/. AMSAT's team number is 69710: https://stats.foldingathome.org/team/69710

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive addi-tional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students

enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73 and remember to help Keep Amateur Radio in Space,

This week's ANS Editor,

Paul Stoetzer, N8HM
n8hm at amsat dot org